

# HP NC373F PCI Express Multifunction Gigabit Server Adapter User Guide



Part Number 417728-00B  
June 2007 (Second Edition)

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### **Audience assumptions**

This document is for the person who installs, administers, and troubleshoots servers and storage systems. HP assumes you are qualified in the servicing of computer equipment and trained in recognizing hazards in products with hazardous energy levels.

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# Contents

- Technician notes ..... 4
  - Where to go for additional help ..... 4
  - HP contact information ..... 5
- Introduction ..... 6
  - Overview ..... 6
  - LED indicators ..... 7
- Installing an adapter ..... 8
  - Installation overview ..... 8
  - Preventing electrostatic discharge ..... 8
  - Installing an adapter in a server ..... 9
  - Installing a low profile bracket ..... 9
  - Connecting the network cable ..... 10
- Specifications ..... 11
  - HP NC373F PCI Express Multifunction Gigabit Server Adapter specifications ..... 11
- Regulatory compliance notices ..... 12
  - Regulatory compliance identification numbers ..... 12
  - European Union regulatory notice ..... 12
  - Korean class B notice ..... 13
  - BSMI notice ..... 13
  - Laser compliance ..... 13
  - Disposal of waste equipment by users in private households in the European Union ..... 14
- Electrostatic discharge ..... 15
  - Preventing electrostatic discharge ..... 15
  - Grounding methods to prevent electrostatic discharge ..... 15
- Acronyms and abbreviations ..... 16
- Index ..... 17

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# Technician notes

## In this section

Where to go for additional help ..... 4



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**WARNING:** Only authorized technicians trained by HP should attempt to repair this equipment. All troubleshooting and repair procedures are detailed to allow only subassembly/module-level repair. Because of the complexity of the individual boards and subassemblies, no one should attempt to make repairs at the component level or to make modifications to any printed wiring board. Improper repairs can create a safety hazard.

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**WARNING:** To reduce the risk of electric shock, personal injury, and damage to the equipment:

- Do not attempt to service any parts of the equipment other than those specified in the following procedure. Any other activities may require that you shut down the server and remove the power cord.
  - Installation and maintenance of this product must be performed by individuals who are knowledgeable about the procedures, precautions and hazards associated with the product.
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**WARNING:** To reduce the risk of electric shock or damage to the equipment:

- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
  - Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
  - Unplug the power cord from the power supply to disconnect power to the equipment.
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**CAUTION:** To properly ventilate the system, you must provide at least 7.6 cm (3.0 in) of clearance at the front and back of the server.

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**CAUTION:** The server is designed to be electrically grounded (earthed). To ensure proper operation, plug the AC power cord into a properly grounded AC outlet only.

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**NOTE:** Any indications of component replacement or printed wiring board modifications may void any warranty.

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## Where to go for additional help

1. Go to the HP website (<http://www.hp.com>).
2. Click **Software & Driver Downloads** from the left menu bar.

3. Type the product name in the **For product** box and press **Enter**. For example, type NC370T.
4. Download the drivers, firmware, or documentation as needed.

## HP contact information

For the name of the nearest HP authorized reseller:

- In the United States, see the HP US service locator webpage ([http://www.hp.com/service\\_locator](http://www.hp.com/service_locator)).
- In other locations, see the Contact HP worldwide (in English) webpage (<http://welcome.hp.com/country/us/en/wwcontact.html>).

For HP technical support:

- In the United States, for contact options see the Contact HP United States webpage ([http://welcome.hp.com/country/us/en/contact\\_us.html](http://welcome.hp.com/country/us/en/contact_us.html)). To contact HP by phone:
  - Call 1-800-HP-INVENT (1-800-474-6836). This service is available 24 hours a day, 7 days a week. For continuous quality improvement, calls may be recorded or monitored.
  - If you have purchased a Care Pack (service upgrade), call 1-800-633-3600. For more information about Care Packs, refer to the HP website (<http://www.hp.com>).
- In other locations, see the Contact HP worldwide (in English) webpage (<http://welcome.hp.com/country/us/en/wwcontact.html>).

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# Introduction

## In this section

Overview .....	6
LED indicators .....	7

## Overview

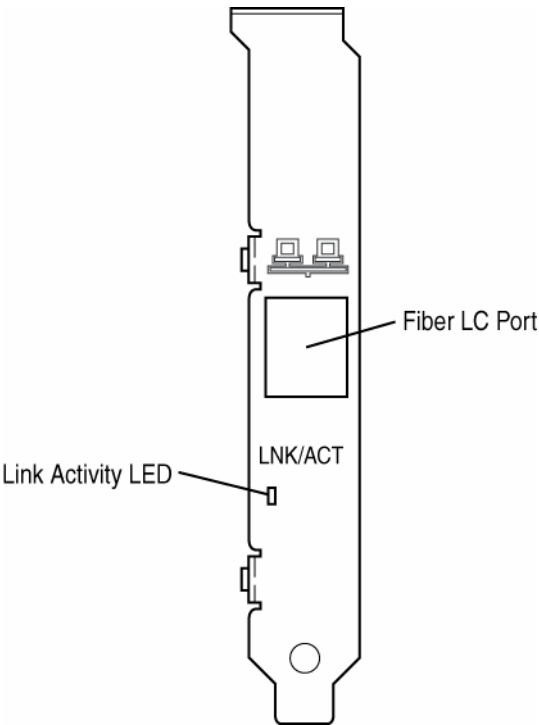
The HP NC373F PCI Express Multifunction Gigabit Server Adapter is a high-performance Ethernet adapter that delivers 1000 Mb/s Ethernet over fiber cabling. The network connection is made through an LC fiber port. The LED indicator shows the activity and link status. See LED indicators (on page 7) for details.

The NC373F is a supported option for selected HP ProLiant servers and offers support for both standard and low-profile slots.

In addition to features that have shipped with other server adapters, the NC373F adapter will also support Receive Side Scaling, TCP/IP Offload Engine (TOE), Accelerated iSCSI, and Remote Direct Memory Access (RDMA) when those features become available. For details about each of these advanced features and for other information regarding the latest functionality, features, and operating system support for this server adapter, see the HP website (<http://h18004.www1.hp.com/products/servers/networking/index-nic.html>).

# LED indicators

The NC373F adapter has a single fiber LC port and LED indicator for link activity.



LED indicator	Status	Description
LNK/ACT	Off	No link to the adapter is established. The adapter is not receiving power or the cable connection is faulty. No link to the adapter is established.
	On	Link to the adapter is established. The adapter is receiving power and the cable connection is good.
	Flashing	The adapter is sending or receiving network data at 1000 Mb/s.

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# Installing an adapter

## In this section

Installation overview .....	8
Preventing electrostatic discharge.....	8
Installing an adapter in a server.....	9
Installing a low profile bracket.....	9
Connecting the network cable.....	10

## Installation overview

This chapter describes installation precautions, how to install the adapter, and how to connect the network cable.



**WARNING:** To reduce the risk of personal injury or damage to the equipment, consult the safety information and user documentation provided with the server before attempting the installation.

Many servers are capable of providing energy levels that are considered hazardous and are intended to be serviced only by qualified personnel who have been trained to deal with these hazards. Do not remove enclosures or attempt to bypass any interlocks that may be provided for the purpose of removing these hazardous conditions.



**WARNING:** Installation of this adapter should be performed by individuals who are both qualified in the servicing of computer equipment, and trained in the hazards associated with products capable of producing hazardous energy levels.

This adapter is intended to be installed in Certified (UL or CSA) ITE equipment having instructions for adding and removing user installed components such as PCI, PCI-X, and PCI Express devices. Refer to the equipment instructions to verify that it is suitable for user installed components and that it has the power capacity to support all of the installed components.

**NOTE:** Before removing the cover of your server, refer to the HP documentation for the proper methods for installing a PCI card and avoiding electric shock hazards.

## Preventing electrostatic discharge

To prevent damaging the system, be aware of the precautions you need to follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

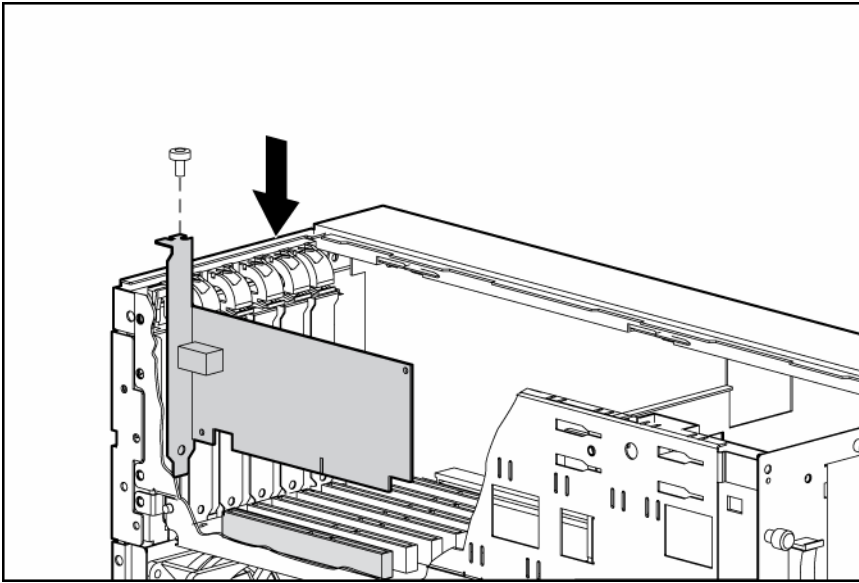
To prevent electrostatic damage:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.

- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

## Installing an adapter in a server

See the HP ProLiant server documentation for additional information on how to safely install a PCI Express card in the server.



**CAUTION:** If the server is not PCI Hot Plug compliant, power it down and unplug the power cord from the power outlet before removing the server access panel. Failure to do so may damage the adapter or server.

1. Power down the server.
2. Remove the power cord and server access panel. Then remove the cover bracket from a PCI Express slot.



**WARNING:** To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

3. Firmly seat the adapter in a PCI Express slot and secure the adapter bracket.

**NOTE:** For 1U type servers you may need to replace the standard profile bracket with a low profile bracket. See [Installing a low profile bracket](#) (on page 9).

4. Replace the access panel and plug in the power cord.

## Installing a low profile bracket

You may have to install a low profile bracket to complete the product installation. The low profile bracket replaces the existing standard profile bracket shipped on the product.

To install a low profile bracket:

1. Using a correctly sized slotted screwdriver, carefully remove the two board lock screws located at the top and bottom of the connector.
2. Remove the standard profile bracket and place the low profile bracket over the connector. Be careful not to damage the connector or bind the low profile bracket to the connector.

## Connecting the network cable

The HP NC373F PCI Express Multifunction Gigabit Server Adapter uses an LC fiber port. This port supports multimode fiber with a maximum cable length dependent on the fiber type, mode, and cable size. See Specifications (on page [11](#)) for the maximum cable length.

To insert the LC connector into the adapter port, line up the slot on the fiber connector with the adapter and gently push until the retainers click into place.

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# Specifications

In this section

HP NC373F PCI Express Multifunction Gigabit Server Adapter specifications ..... 11

## HP NC373F PCI Express Multifunction Gigabit Server Adapter specifications

Specification	Value
Network Controller Chipset	Broadcom 5708
Bus Type	PCI Express v1.0a
Bus Speed	2.5 GHz
Data Transfer Method	PCI Express Bus Mastering
Power Requirement	Maximum: ~2A @ 3.3V
Standards Supported	IEEE802.3x, IEEE802.3ad, IEEE802.1p, IEEE802.1Q, IEEE802.3z
Dimensions	6.5 x 2.5 in (16.5 x 6.5 cm) without bracket
Connector and Distances	Fiber LC up to 1,804 ft/550m with multimode fiber (50µm/125µm)
Interrupts Supported	Automatically configured
Temperature Range	Operating: 0°C to 55°C (32°F to 131°F) Storage: -40 to 85°C (-40°F to 185°F)
Relative Humidity (non-condensing)	Operating: 10% to 90% Storage: 5% to 95%
Safety Compliance	CSA Mark (US and Canada) CE Mark EN 60590

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# Regulatory compliance notices

## In this section

Regulatory compliance identification numbers .....	12
European Union regulatory notice .....	12
Korean class B notice.....	13
BSMI notice .....	13
Laser compliance .....	13
Disposal of waste equipment by users in private households in the European Union .....	14

## Regulatory compliance identification numbers

For the purpose of regulatory compliance certifications and identification, this product has been assigned a unique regulatory model number. The regulatory model number can be found on the product nameplate label, along with all required approval markings and information. When requesting compliance information for this product, always refer to this regulatory model number. The regulatory model number is not the marketing name or model number of the product.

## European Union regulatory notice

This product complies with the following EU Directives:

- Low Voltage Directive 2006/95/EC
- EMC Directive 2004/108/EC
- Machinery Directive 98/37/EEC

Compliance with these directives implies conformity to applicable harmonized European standards (European Norms) which are listed on the EU Declaration of Conformity issued by Hewlett-Packard for this product or product family.

This compliance is indicated by the following conformity marking placed on the product:



This marking is valid for non-Telecom products and EU harmonized Telecom products (e.g. Bluetooth).



This marking is valid for EU non-harmonized Telecom products.

\*Notified body number (used only if applicable—refer to the product label)

Hewlett-Packard GmbH, HQ-TRE, Herrenberger Strasse 140, 71034 Boeblingen, Germany

## Korean class B notice

### B급 기기 (가정용 정보통신기기)

이 기기는 가정용으로 전자파적합등록을 한 기기로서  
주거지역에서는 물론 모든지역에서 사용할 수 있습니다.

## BSMI notice

### 警告使用者:

這是甲類的資訊產品，在居住的  
環境中使用時，可能會造成射頻  
干擾，在這種情況下，使用者會  
被要求採取某些適當的對策。

## Laser compliance

This product may be provided with an optical storage device (that is, CD or DVD drive) and/or fiber optic transceiver. Each of these devices contains a laser that is classified as a Class 1 Laser Product in accordance with US FDA regulations and the IEC 60825-1. The product does not emit hazardous laser radiation.

Each laser product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated May 27, 2001; and with IEC 60825-1:1993/A2:2001.



**WARNING:** Use of controls or adjustments or performance of procedures other than those specified herein or in the laser product's installation guide may result in hazardous radiation exposure. To reduce the risk of exposure to hazardous radiation:

- Do not try to open the module enclosure. There are no user-serviceable components inside.
- Do not operate controls, make adjustments, or perform procedures to the laser device other than those specified herein.
- Allow only HP Authorized Service technicians to repair the unit.

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration implemented regulations for laser products on August 2, 1976. These regulations apply to laser products manufactured from August 1, 1976. Compliance is mandatory for products marketed in the United States.

# Disposal of waste equipment by users in private households in the European Union



This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

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# Electrostatic discharge

## In this section

Preventing electrostatic discharge .....	15
Grounding methods to prevent electrostatic discharge .....	15

## Preventing electrostatic discharge

To prevent damaging the system, be aware of the precautions you need to follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

To prevent electrostatic damage:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

## Grounding methods to prevent electrostatic discharge

Several methods are used for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm  $\pm 10$  percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
- Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, have an authorized reseller install the part.

For more information on static electricity or assistance with product installation, contact an authorized reseller.

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# Acronyms and abbreviations

## ACPI

Advanced Configuration and Power Interface

## APM

advanced power management

## CSA

Canadian Standards Association

## DMA

direct memory access

## IEEE

Institute of Electrical and Electronics Engineers

## iSCSI

Internet Small Computer System Interface

## MDI-X

medium dependent interface-crossover

## PCI Express

Peripheral Component Interconnect Express

## RDMA

Remote Direct Memory Access

## RSS

Receive-Side Scaling

## TOE

TCP/IP Offload Engine

## UTP

unshielded twisted pair

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# Index

## **B**

bracket, low profile 9

## **C**

cables, networking 10

cautions 4

## **E**

electrostatic discharge 8, 15

## **F**

features 6

## **G**

grounding methods 15

## **I**

installation overview 8

installing adapters 9

## **N**

NIC LEDs 7

## **R**

regulatory compliance notices 12

## **S**

specifications 11